Lithium Carbon Fluoride Cylindrical Cells
March 2015

Product Safety Data Sheet (PSDS)

Section 1: Product and Manufacturer Information

Product Name: Engineered Power DD Cell Product No.: OCV: 3.7 V CCV: 2.8 V

Trade Name: Lithium Carbon Fluoride Cylindrical Cell Approximate Weight: 60-120g

Chemical System: Lithium Carbon Fluoride Rechargeable: No

Manufactured by Engineered Power
20, 3103 – 14th Ave NE
Calgary, Alberta T2A 7N6
Telephone Number (403) 235-2584

In Case of Emergency Contact ChemTel Inc.
Toll Free North America 1 (888) 255-3924
Collect Calls Outside USA 1 (813) 248-0585

Section 2: Hazards Identification

Batteries should be sealed and safe for use. Should internal components be exposed, handling should be avoided without proper protection.

Ingestion: Batteries should not be swallowed. Swallowing can result in severe burns to the mouth and GI tract.
Inhalation: Battery fumes can cause respiratory irritation.
Skin Contact: Internal battery components can cause irritation and burns.
Eye Contact: Internal battery components can cause irritation and burns.

Section 3: Composition

Material	Percent Weight	CAS Number
Lithium	0-7	7439-93-2
Carbon Fluoride	0-50	51311-17-2
Organic Solvent	0-20	N/A
Conductive Additives	0-10	N/A
Lithium Salt	0-15	N/A
Packaging	Remainder	N/A

Section 4: First Aid Measures

Ingestion: Do not induce vomiting or provide food or drink. Seek medical attention.
Inhalation: Remove person from area of chemical exposure to fresh air. Seek medical attention.
Skin Contact: Flush area of contact with water for at least fifteen minutes. Removed exposed articles of clothing. Seek medical attention.
Eye Contact: Flush eyes with water for at least fifteen minutes. Removed contacts or glasses. Seek medical attention.

Section 5: Firefighting Measures

In case of fire with lithium metal battery, use a class D fire extinguisher. Burning batteries will produce harmful organic vapors as well as corrosive lithium hydroxide fumes. Only those trained in dealing with fires should try to put out the fire. Those who are not trained should leave the scene. Firefighters should enter the fire area with proper respiratory protection.

Section 6: Accidental Release Measures

In case of exposed internal components of a battery, the following precautions and controls should be taken.

Engineering Controls: Facility should provide adequate ventilation for released fumes as well as an eye wash station and safety shower.
Eye PPE: Use safety goggles or a face shield.
Respiratory PPE: Use NIOSH acid gas filter mask.
Clothing PPE: Use boots, gloves, lab coat and apron.
Cleaning: Neutralize spilled content with sodium bicarbonate. Collect all battery components into a leak-proof, plastic container. Dispose of components according to laws and regulations.

Section 7: Handling and Storage

Failure to abide by the following suggestions can result in leaking, rupturing, or explosion of batteries.

Storage: Store batteries in a cool, well ventilated area. Batteries should be kept separate from combustible materials and stored in a manner that prevents short-circuiting. Batteries should not be stored next to loose metal materials.

Handling: Do not attempt to charge, short-circuit, puncture, rupture, or mechanically deform batteries. Do not heat batteries in excess of 150 C.

Section 8: Exposure and Personal Protection

Under normal circumstances no special protection should be required. In cases of ruptures or leaks, please see **Section 6** of this SDS.

Section 9: Physical and Chemical Properties

Appearance	Cylindrical
Physical State	Solid
Odor	Odorless
Boiling Point	N/A
Vapor Point	N/A
Melting Point	N/A
Vapor Density	N/A
Density	N/A
Solubility in Water	Insoluble

Section 10: Stability and Reactivity

Chemical Stability: Stable under normal circumstances.
Reactivity: Batteries are reactive when exposed to short-circuiting, puncturing, rupturing, charging, mechanical deformation, or temperatures in excess of 160 C.
Material Compatibility: Incompatible with conductive materials, acids, and oxidizers.

Section 11: Toxicological Information

With proper handling and disposal, batteries are not toxic.

Section 12: Ecological Information

Improperly disposed of batteries can cause harm to the environment.

Section 13: Disposal

Proper Shipping Name: WASTE LITHIUM METAL BATTERIES
UN Number: 3090 (UN 3091 for Lithium Metal Batteries Contained in Equipment or Lithium Metal Batteries Packed With Equipment)
Hazard Classification: Class 9 (Misc.)
Packing Group: II
Labels Required: MISCELLANEOUS HAZARDOUS WASTE
Waste Disposal Code: D003
Other: All lithium carbon fluoride batteries should be disposed of by a certified hazardous waste disposal facility. Contact Engineered Power for recommended disposal facilities.

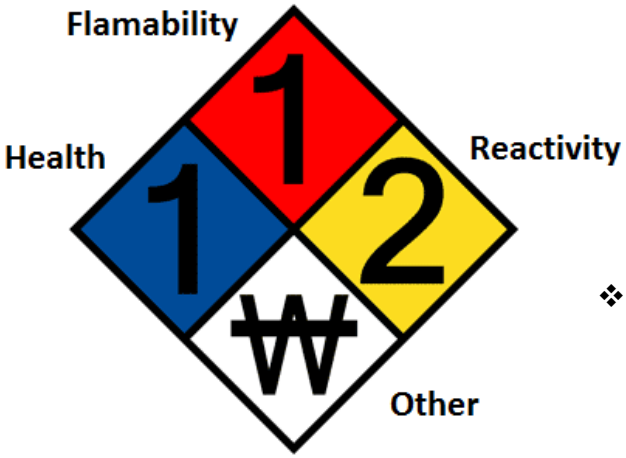
Section 14: Transport

TBD

Section 15: Regulatory Information

Dependent on Transport.

Section 16: Other Information



- For cells or battery packs involved in an accident, cells that have vented, or exploded, follow the

ENGINEERED POWER

North American Emergency
Response Guide (NAERG) #138